Children's Hospital of Philadelphia PolicyLab

Association of a Sweetened Beverage Tax With Soda Consumption in High School Students

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IMPORTANCE: Sweetened beverage taxes are one policy approach to reduce intake of added sugars. Soda is the leading source of added sugars in the US diet, but few studies have examined how such taxes influence sweetened beverage intake in youth. OBJECTIVE: To estimate the association between the Philadelphia, Pennsylvania, beverage tax and adolescent soda intake. DESIGN, SETTING, AND PARTICIPANTS: This economic evaluation of school district–level Youth Risk Behavior Surveillance System data from September 2013 to December 2019 compared weekly soda intake in high school students in Philadelphia, a city with a sweetened beverage tax, with that in 7 comparison cities without beverage taxes. Difference-in-differences regression modeling was used to estimate change in soda intake in Philadelphia compared with control cities. Secondary analyses compared 100% juice and milk intake to explore potential substitution associations. Subgroup analyses evaluated differences by race and ethnicity and weight status (obesity and overweight or obesity). Analyses were performed between August 20 and October 20, 2020. School districts that had weighted data and a survey question on weekly soda intake from 2013 to 2019 were included. The study included high school students, grades 9 to 12, in school districts participating in the Youth Risk Behavior Surveillance System from 2013 to 2019. EXPOSURES: Implementation of a sweetened beverage tax in Philadelphia, Pennsylvania, in January 2017. MAIN OUTCOMES AND MEASURES: Reported weekly servings of soda, 100% juice, and milk. RESULTS: A total of 86 928 participants (weighted mean [SD] age, 15.8 [1.3] years; 49% female) from 8 US cities (including Philadelphia) were included. Before the tax, adolescents in the 7 comparison cities had a mean intake of 4 servings of soda per week compared with 5.4 servings per week in Philadelphia. Philadelphia's tax was associated with a reduction of 0.81 servings of soda per week (95% CI, −1.48 to −0.14 servings; $P = .02$) 2 years after tax implementation. There was no significant difference in 100% juice or milk intake, although Philadelphia adolescents consumed more juice than those in nontaxed cities. In subgroup analyses, the tax was associated with a reduction of 1.13 servings per week in Hispanic/Latinx adolescents (95% CI, −2.04 to −0.23 servings; $P = .01$) and 1.2 servings per week in adolescents with obesity (95% CI, −2.33 to −0.13 servings; $P = .03$). CONCLUSIONS AND RELEVANCE: This economic evaluation found that a sweetened beverage tax was associated with a reduction in soda intake among adolescents, providing evidence that such taxes can improve dietary behaviors.

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